

Palmer (G. H.)



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LIEUTENANT PALMER'S

ARMY EQUIPMENTS.

Receipt
Acknowledged
June 19th

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Belait Wisconsin

June 16th 1893

Surgeon General.

W S Army.

Washington, D C,

Sir,

I have the honor to submit the accompanying circular describing Army Equipment, submitted by me.

Very respectfully yours,

Geo H. Palmer,

Chief - Medical



Presented by the
Author

LIEUTENANT PALMER'S

ARMY EQUIPMENTS.

Surgeon Genl's Office
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THE EQUIPMENTS CONSIST OF

*Knapsack, First pattern,
Carrying Braces for Infantry,
Carbine Sling,
Carrying Braces for Cavalry,
Light Knapsack, Second pattern.*

WEIGHTS

Of Knapsack complete—First pattern	3	pounds.
Of Back-pad and its Shoulder Straps, and the Waist- brace.....	1	pound.
Of Carbine Sling and Swivel.....	1	"
Of Carbine Sling and Carrying braces	2	pounds.
Of Light Knapsack, Second pattern	1½	"

These weights are exclusive of the waist-belt, cartridge boxes, bayonet scabbard, haversack and canteen.

FIGURE I is the Knapsack, showing the side next the back of the wearer, with overcoat strapped on top and blanket strapped to the side next the back.

FIGURE II is the waist-brace; into buckle *o* may be buckled the strap *g* at the bottom of the knapsack, for the purpose of shifting the weight of the knapsack from one place to another on the wearer. Straps *k* buckle into the buckles *q* on the shoulder straps. The angle of the waist-brace presses against the back at the waist, the curve of the back preventing it from slipping upward when a load is attached to the back-pad. The front ends of the waist-brace pass forward and upward under the arms and buckle into the shoulder straps; the straps *i* support the waist-belt and cartridge boxes.

FIGURE III is the back-pad and its double shoulder straps, attached to the waist-brace, waist-belt and cartridge boxes; *t* is the back-pad; *r* and *s* the shoulder straps—two for each shoulder; *v* is a ring or hook, to which is attached any load to be carried. The double shoulder straps are attached to the back-pad with rivets, so as to be movable on their fastenings, and so connected at their front ends as to insure an equal strain on each strap in whatever direction they may be pulled; they have more bearing surface on the shoulders than a single strap, and are not liable to slip off the shoulders; they can be readily moved from place to place on the shoulders; they concentrate a portion of the bearing of the weight to be carried on the *back*, instead of having it all on the shoulders. The back-pad is adapted to receiving any load to be carried or dragged.

FIGURE IV shows the manner of attaching the waist-brace to the waist-belt and cartridge boxes, they being ready to put on, which is done by clasping the waist-belt around the waist. When no cartridge boxes are carried the waist-belt should be detached from the loop *n* on the waist-brace. The load is more comfortably carried when the waist-belt is worn loosely.

FIGURE V is the knapsack hooked to the back-pad and shoulder straps and ready to be slung; the shoulder straps are seized near the buckles, the knapsack swung on the back, at the same time turning it, the right hand passing over the head; the buckles on the shoulder strap are then attached to the straps on the waist-brace. The wearer may let go one shoulder strap while buckling the other.



Fig. I

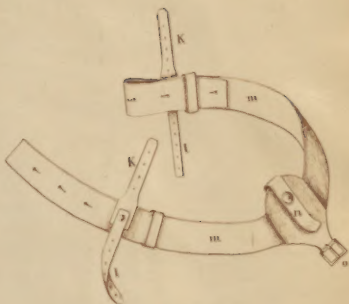


Fig. II

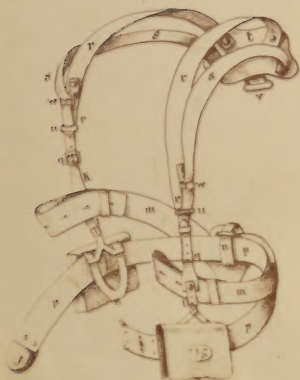


Fig. III

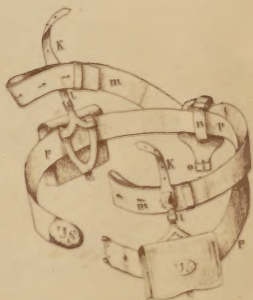


Fig. IV

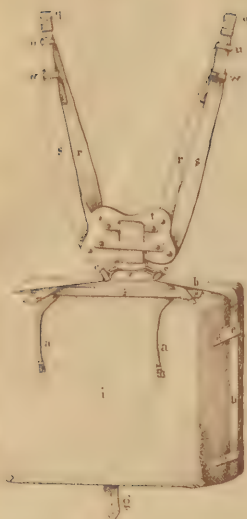


Fig. V

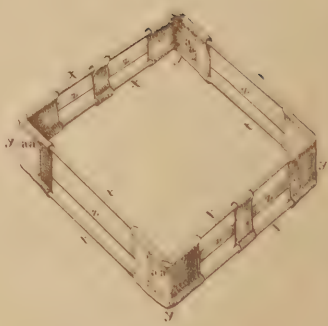


Fig. VI



Fig. VII



Fig. VIII



Fig. IX

FIGURE VI is the light pliable frame of the knapsack, made of eight small, tough, flexible pieces of wood—*x*, butted together at the ends and secured at the corners by strong canvas, in which the sticks are bound; between the sticks, at the corners, are pieces of stiff leather—*a a*, sewed to the canvas; they are to hold the sticks apart the depth of the frame and afford substantial places for attaching the covering and straps of the knapsack; the corners are connected together by straps—*z*, which prevent the cloth from shoving up on the rods and bind the frame strongly together; the rods on each side of the frame may be connected together by pieces of canvas sewed between pieces of stiff leather, giving additional solidity to the frame and affording places to attach straps,

FIGURE VII is the frame with its canvas covering; the covering may be removed from the frame at pleasure; when soiled it can be taken off and washed. The flap of the knapsack is made of vulcanized rubber cloth and is not attached to the canvas covering, but is attached to the top of the frame by the metal loops (figure 8) and covers the top and one side of the knapsack; it may be put on or off at pleasure, or changed to either side of the knapsack.

FIGURE VIII is a metal loop with leather toggle piece for fastening the covering and straps pertaining to the knapsack to the frame. The loop is passed through holes in the covering and straps and the stiff leather pieces of the frame and secured inside by the toggle piece passing through the eye. The straps, thus secured, are movable on their fastenings and may be turned and used on either side of the knapsack.

FIGURE IX is the combined carbine and sabre slings; they are attached to the back-pad by the strap and buckle 5; the metal rings on the ends of the sabre sling 1, hook into the hooks on the sabre straps; the strap and hook 4 on the carbine sling is carried forward and upward under the right arm, and hooked into either of the rings, *w*, *u*, or the buckle *q*, on the shoulder strap.

The sabre sling may be dispensed with and only the carbine sling attached to the back-pad, the sabre being attached to the waist-belt is supported by the shoulders.

A second simpler knapsack is presented for consideration. It consists of a vulcanized rubber cloth flap with a pocket for clothing on its under side, attached, so as to be removed at pleasure, to two straps, into which are buckled the blanket, overcoat, &c. The middle of these straps are connected by two

short straps, whose ends pass through the upper portion of the flap and through a metal ring, by which the pack is attached to the back pad; the straps are also connected by two short straps, the ends of which are attached to a buckle for receiving the strap *o* at the apex of the waist-brace. The blanket and overcoat should be folded flat, about 13 inches high by 15 inches wide, the flap covering the top and one side of the pack. The straps should be adjusted so that the buckle which receives the strap *o*, on the waist-brace, shall be under the bottom of the pack.

The frame of the knapsack is light, pliable, and substantial; it may be thrown violently on the ground, either packed or empty, without breaking or becoming disarranged; it obviates the necessity of attaching any supporting straps to the cloth covering of the knapsack; everything to be carried may be strapped to it in a compact manner; it admits of having the covering and straps of the knapsack attached to it in such a manner as to be put on and off at pleasure. The blanket may be strapped to either side of the knapsack by turning the blanket straps on their fastenings. The knapsack may be reversed and worn so that the glazed surface of the water-proof flap shall be outward in foul weather and the canvas covering outward in hot weather.

The supporting straps—*b*, terminate at the top of the knapsack in hooks, or may be attached to a ring; they are buckled together at the bottom of the knapsack and by this buckle the knapsack may be raised or lowered on the back. The ring or hooks are hooked to the back-pad and the knapsack put on or off without removing any of the carrying braces from the body. These straps support the knapsack in such a manner as to make it sit snugly to the back instead of tipping backward and drawing back the shoulders, and any article strapped to the side of the knapsack, next the back, tends to make it tip toward the back.

The knapsack may be reversed by removing the supporting straps from the loops *e* at the top of the knapsack, turning these loops on their fastening and replacing the supporting straps, carrying them to the opposite side of the overcoat. The overcoat may be strapped to the top or side of the knapsack, or to the back-pad; if on top, the coat straps should enclose the supporting straps to prevent the top from tipping backward. If the overcoat is strapped to the back-pad, at inspections or on the march the

knapsack can be unhooked from the back-pad, leaving the overcoat and carrying braces on the body; the soldier can lie down to rest, his overcoat serving for a support to his head and shoulders; he can also unclasp his waist-belt and none of his equipments will fall off should he spring suddenly from the ground, his waist-belt being unbuckled. On campaigns the knapsack may be left in quarters, and the blanket, overcoat, haversack &c., carried on the back-pad. The knapsack, with overcoat strapped on top, should be worn so that the top of the overcoat shall be about as high as the shoulders, the bottom of the knapsack bearing on the waist-brace when buckled to it.

The carrying braces, consisting of the back-pad and its double shoulder straps and the waist-brace, are so constructed as to concentrate the pressure of the weight to be carried on the shoulders and upper portion of the back and to transfer the pressure from one place to another to give ease to the wearer. They cannot slip off the shoulders; they distribute the pressure of the weight carried, over more surface of the shoulders, and press into the shoulders less than single straps; to give ease to the shoulders they can be moved from place to place more readily than single straps. *They enable a man to carry or drag a load without pressure on the waist or chest, or bearing down on the hips, leaving his body, shoulders and arms free in their movements.* Any weight attached to the back-pad and carried on the back, or on either side of the wearer, bears equally on both shoulders and the back. The waist-belt may be worn unbuckled; cartridge boxes or other articles carried on the waist-belt or waist-brace, in front or at the back, are supported by the shoulders and back and tend to balance any weight attached to the back-pad.

The braces when applied to the cavalry, support on the back and shoulders the weight of the arms and ammunition, thus relieving one shoulder and the chest of the weight of the carbine, and the waist and hips of the weight of the pistol, sabre and, cartridges. The carbine cartridge box worn at the apex of the waist-brace, tends to balance the weight of the carbine attached to the back-pad. If the cavalryman is required to do duty on foot, his clothing, &c., may be carried on the back-pad.

The braces tend to hold the body in an erect position, and prevent the shoulders drooping forward without pulling them too much backward.

The Knapsack and Braces may be put on and off as follows :

The waist-belt, with waist-brace attached (figure IV), is first buckled round the waist, the cartridge boxes pulled toward the front so that the straps *k* may be readily reached ; the knapsack, with the back-pad hooked on, is then slung on the back and the straps *k* buckled to the shoulder straps. The knapsack is taken off by unbuckling the shoulder straps and letting the knapsack down, bringing it to the front by holding on to one of the shoulder straps. It may be taken off by a comrade unhooking it from the back-pad. The braces may be put on first and the knapsack then hooked to the back-pad. The whole equipment may be taken off at once by unclasping the waist-belt and pushing the straps off the shoulders.

The knapsack or pack, when attached only to the back-pad, is supported on the shoulders and back alone ; by buckling the strap *g* at the bottom of the knapsack into the buckle *o* on the waist-brace, a portion of the weight is transferred to the back part of the hips, the whole weight being distributed between the shoulders and back part of the hips ; by tightening the strap *g* and letting out the shoulder straps at the buckles *q*, the whole weight is supported on the back part of the hips, the pressure on the shoulders is then changed from the top to the front part of the shoulders, and is only sufficient to prevent the top of the knapsack from falling backward. By letting out or taking up the straps *i* supporting the cartridge boxes, they may be moved to different places on the waist-belt. If the waist-belt is worn unbuckled its ends may be allowed to hang down or they may be fastened up to the shoulder straps.

From one to four cartridge boxes may be carried on the waist-belt.

The knapsack and carrying braces may be worn without the aid of the waist-belt or cartridge boxes.

The knapsack can be carried with but one shoulder strap buckled.

These changes of the pressure of the load from one place to another may be made without removing any of the carrying braces from the body or halting while on the march.

In marching in double time the waist-belt and the strap at the bottom of the knapsack should be buckled.

The haversack and canteen may be attached to the back-pad and carried on the back or side of the knapsack, or under the

arm, the straps being carried over the shoulder from the front and fastened to the back-pad.

The waist-brace is adjusted to fit the person by moving the metal studs holding the straps *i* and *k*.

The cavalry braces are put on similar to the infantry braces; the waist-belt being first buckled on and the shoulder straps, with carbine sling attached to the back-pad, swung on the back and buckled. To give ease to the wearer, the waist-belt may be unbuckled, or the straps *i* supporting the waist-belt may be let out, thus placing the weight of the sabre, pistols and cartridge boxes on the waist and hips; the carbine may be carried on either side of the person.

If an extra pistol is carried instead of the carbine, the shoulder braces will support the sabre, pistols, cartridge boxes, &c., on the back and shoulders; in this case it will be found advantageous to attach a strap with hook, to connect the back-pad to the waist-belt or cartridge box at the back.

Respectfully submitted,

NASHVILLE, TENN., }
January 5th, 1873. }

GEO. H. PALMER,
First Lieut. 16th Infantry.



I have examined the knapsack which Lieut. Palmer, 16th Infantry, has fabricated and am of the opinion that it has much merit.

The new knapsack, Ordnance pattern, which is now in use at this Post, has one broad strap across each shoulder and seems with a heavy load not to bear equally upon all parts of the slope of the shoulder.

Lieut. Palmer's knapsack has straps which are self-adjusting upon the slopes of the shoulders, and thus gives the soldier more ease in carrying a heavy load.

I am of the opinion that Lieut. Palmer's knapsack merits examination and trial.

NASHVILLE, TENN.,
January, 9th, 1873. }

JAMES VAN VOAST,
Lieut. Col. 16th Infantry.

—:o:—

I have carefully examined a knapsack and sling invented by First Lieut. Geo. H. Palmer, 16th Infantry, and believe it to be superior to any I have ever before met with.

Its chief points of excellence are the ease and comfort with which it can be carried; the free action it allows to the respiratory muscles; the unrestricted movements of the arms and the rapidity with which it can be slung and unslung.

It is so arranged that by merely taking up or letting out a couple of straps the weight can be distributed in any proportion between the shoulders and sacrum, thereby allowing one set of muscles that have become fatigued to rest, while another set perform the labor.

At a competitive trial made between this and the new regulation knapsack the men who carried each alternately, declared they could with equal ease carry twice the weight in this knapsack that they could in the one recently adopted.

I consider Lieut. Palmer's improvement of such great importance that I cordially recommend it to favorable consideration; believing if it is adopted, it will greatly enhance the health and comfort of the enlisted men on the march.

NASHVILLE, TENN.,
January 4th 1873. }

JAMES F. WEEDS,
Surgeon U. S. Army.

—:o:—

I have witnessed a competitive trial of the Palmer knapsack, with the new pattern issued by the Ordnance Department, and believe the former to be preferable in all respects. It is certainly much preferred by the men, who are the best judges of the degree of comfort and convenience attained in each. It is also much superior in appearance.

NASHVILLE, TENN.,
January 9th, 1873. }

W. H. CLAPP,
1st Lieut. & Adj., 16th U. S. Inf.

—:o:—

I have examined Lieut. Geo. H. Palmer's new Equipment and unhesitatingly say that it is the best I ever saw. Its chief merit lies in the pad, shoulder and back-straps. My company is equipped with the new pattern of Infantry Equipments lately issued for trial, and there is no part or point in which Lieutenant Palmer's is not superior. A number of old soldiers of my company have tried this equipment and all agree in saying that it is easier to carry than the one lately issued to them. My own experience confirms these statements. The shoulder and back-straps allow much freer use of the arms, and the compensating attachment of the straps to the pad and to each other will permit their pressing evenly on all forms of shoulders, and at all different positions the shoulder may be put in. Attaching the bottom of the knapsack or pack to the back-strap is superior to the device attempting to arrive at the same end in the equipment now on trial. Last, and not least, is the ease with which the knapsack can be slung and unslung, each man can sling and unslung it alone without the least trouble, which certainly is not the case in the other.

NASHVILLE, TENN.,
January 8th, 1873. }

WM. G. WEDEMEYER,
Captain 16th Infantry.

—: o :—

I concur in the above opinions as to the merits of the knapsack invented by Lieut. Geo. H. Palmer, 16th Infantry, and believe it superior to any other I have ever seen.

NASHVILLE, TENN.,
January 9th, 1873. }

D. M. VANCE.
Captain 16th Infantry.

